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PATENT  
Customer No. 22,852  
Attorney Docket No. 08350.0663-00000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	)	
	)	
Kazunori YOSHINO	)	Group Art Unit: 3745
	)	
Application No.: 10/029,290	)	Examiner: Frank D. Lopez
	)	
Filed: December 28, 2001	)	Confirmation No.: 3082
	)	
For: HYDRAULIC CONTROL SYSTEM	)	
FOR REDUCING MOTOR	)	
CAVITATION	)	

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

**REQUEST FOR RECONSIDERATION**

In reply to the Office Action mailed August 31, 2004, Applicant respectfully requests that the Examiner reconsider the present application and withdraw the claim rejections for the reasons explained in detail below.

As an initial matter, Applicant appreciates the Examiner's reconsideration and withdrawal of the finality of the final Office Action mailed April 6, 2004.

In the Office Action mailed August 31, 2004, claims 1, 4, 15, and 16 were rejected under 35 U.S.C. § 103(a) based on Yoshimatsu (U.S. Patent No. 5,063,742) (hereinafter "Yoshimatsu '742") combined with Krusche (U.S. Patent No. 4,665,699) and Yoshimatsu (U.S. Patent No. 5,062,266) (hereinafter "Yoshimatsu '266"). Claims 1 and 15 are the only independent claims rejected under § 103(a) based on those references, and Applicant respectfully traverses the § 103(a) rejection of independent

claims 1 and 15 because the Office Action fails to establish a case of *prima facie* obviousness, as will be explained in more detail below.

In the Office Action, the rejection statement asserts that the Yoshimatsu '742 reference discloses, among other things, "a fluid control system and method of operating comprising . . . a dedicated flow line configured to provide make up fluid to the motor at a location between the motor and the back pressure element; and a pilot pump (21, shown in fig. 1, and schematically connected to pilot valve 24, in fig. 3)) [sic] provid[ing] fluid across a pilot relief valve (23) disposed in a second flow line, connected to tank (15) . . . ." Office Action at 2. The rejection statement concedes, however, that the Yoshimatsu '742 reference "does not disclose that the second flow line is connected to the motor return flow line, in parallel to the first flow line . . . ." Id. The rejection statement nevertheless asserts that the Krusche reference discloses "a fluid control system and method of operating comprising . . . a pilot pump (25) provid[ing] fluid across a pilot relief valve (196) disposed in a second flow line (194,200), connected to the tank; [and] that the second flow line is connected to the motor return flow line (see fig 3)." Office Action at 3. The rejection statement thereafter concludes that "since the connection between the pilot relief valve and the tank of Yoshimatsu (5,063,742) and Krusche are functionally equivalent; it would have been obvious . . . to connect the second flow line of Yoshimatsu (5,063,742) to the motor return flow line, as taught by Krusche, as a matter of engineering expediency." Id.

Applicant respectfully traverses the rejection because the Office Action has failed to establish a *prima facie* case of obviousness since there is no legally proper

suggestion or motivation to combine the Yoshimatsu '742 and Krusche reference teachings in the rejection statement's proposed, hypothetical manner.

According to the guidance of the M.P.E.P., "[t]o establish a *prima facie* case of obviousness, . . . there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings." § 2143. The M.P.E.P. further advises that "[t]he teaching or suggestion to make the claimed combination . . . must . . . be found in the prior art, not in applicant's disclosure." *Id.* (citation omitted). In addition, "[t]he mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination." § 2143.01 (citation omitted). Furthermore, "[i]n order to rely on equivalence as a rationale supporting an obviousness rejection, the equivalency must be recognized in the prior art, and cannot be based on applicant's disclosure or the mere fact that the components at issue are functional or mechanical equivalents." § 2144.06 (citation omitted).

Because there is a complete absence of any suggestion or motivation in either the Yoshimatsu '742 reference or the Krusche reference to make the rejection statement's proposed, hypothetical modification to the Yoshimatsu '742 reference's system, the rejection statement's proposed, hypothetical modification is not *prima facie* obvious. Furthermore, Applicant respectfully disagrees with the rejection statement's assertion about "the connection between the pilot relief valve and the tank of Yoshimatsu (5,063,742) and Krusche [being] functionally equivalent."

Neither the Yoshimatsu '742 reference nor the Krusche reference provides any suggestion or motivation to make the rejection statement's proposed, hypothetical modification to the Yoshimatsu '742 teachings or any indication that the prior art recognizes that "the connection between the pilot relief valve and the tank of Yoshimatsu (5,063,742) and Krusche are functionally equivalent," as asserted in the rejection statement.

The Yoshimatsu '742 reference discloses a hydraulic control system for controlling the slewing motion of a slewing mechanism for slewing a revolving superstructure of, for example, a backhoe, that includes a hydraulic pump 1, a swing mode selector valve 2 fluidly connected to the hydraulic pump 1, and a hydraulic motor 3 for driving the slewing mechanism. Yoshimatsu '742 further discloses two supply-and-discharge lines 31a and 31b, each of which is connected between the swing mode selector valve 2 and a respective port of the hydraulic motor 3 for selectively supplying pressurized fluid to a supply side port 3a of the hydraulic motor 3 when the system is in a driving operating mode. Yoshimatsu '742 also discloses a main relief valve 12 common to both of the supply-and-discharge lines 31a and 31b, wherein a pair of relief valves 4a and 4b capable of being set for a high set relief pressure higher than the set relief pressure of the main relief valve 12 and for a low set relief pressure lower than the set relief pressure of the main relief valve 12 are provided in respective ones of the supply-and-discharge lines 31a and 31b connected to the supply-and-discharge ports 3a and 3b of the hydraulic motor 3.

The Yoshimatsu '742 reference further discloses a swing mode control valve 24 including a pair of variable pressure reducing valves. A pilot hydraulic pump 21 and a

pilot relief valve 23 are connected to a supply line 22 connected to the inlet port of the swing mode control valve 24. The pressure of the pilot working fluid in the supply line 22 is regulated at a fixed pressure by the pilot relief valve 23. The swing mode control valve 24 applies a pilot pressure through the outlet port of one of the variable pressure reducing valves to either pilot lines 26a and 27a or pilot lines 26b and 27b, according to the position of a control lever 25. According to Yoshimatsu '742's drawing figures, the fluid flowing across pilot relief valve 23 is exhausted directly to tank 15.

Applicant respectfully notes that the purpose of Yoshimatsu '742's pilot hydraulic pump 21 and pilot relief valve 23 is to regulate the pressure of the pilot working fluid at a fixed pressure in the supply line 22 via the pilot relief valve 23.

The Krusche reference, on the other hand, discloses a hydrostatic drive including a constant pump 25 (see Fig. 3), which draws fluid through a line 187 from pumps 3 and 4 and delivers fluid into a line 188, which leads to an adjustable restrictor 189, which includes an adjusting element 190 in operating connection with an adjusting element of an engine 1. A relief valve jet 193 is connected in front of the restrictor 189 to line 188 through a line 191, in which a filter 192 is located. The relief valve jet 193 includes a drain connected to a line 194, which in turn is connected to the line 195 that forms the continuation of line 188 beyond the restrictor 189, and which leads to additional structures. A regulated relief valve jet 196 is connected to line 194, and its control pressure is determined through line 197 by the pressure in front of the restrictor 189. The line 198 coming from the relief valve jet 196 leads to a restrictor 199 and a line 200 coming from the restrictor 199 leads through a relief valve jet 201 to the tank 156. Another relief valve jet 202 is connected in parallel to the relief valve jet 196

and the restrictor 199. The relief valve jet 202 maintains the pressure constant in front of the relief valve jet 196. The Krusche reference further discloses that the pressure gradient at the restrictor 189 regulates the relief valve jet 196, which in turn regulates the stream to the restrictor 199.

The Krusche reference further discloses that a maximum-pressure control line 203 branches off from line 198 between the relief valve jet 196 and the restrictor 199, and a second maximum-pressure line 204 branches off from line 200. Line 203 branches into two lines 205 and 206 (see Fig. 2), which each empty into one side of control pressure chambers of the servo control valves 10 and 23, respectively. Two lines 207 and 208 branch off from line 204, and they lead to the other sides of hydraulically controlled servo control valves 10 and 23, respectively. Based on this configuration, the relief valve jet 196 regulates the stroke of the pumps 3 and 4 during operation.

In other words, the Krusche reference's constant pump 25 supplies fluid to the relief valve jet 196, which in turn regulates the strokes of the variable stroke pumps 3 and 4. In contrast, as outlined previously herein, the Yoshimatsu '742 reference's pilot hydraulic pump 21 and pilot relief valve 23 regulate the pressure of the pilot working fluid at a fixed pressure in the supply line 22 via the pilot relief valve 23.

As a result of the clearly divergent functions of the Yoshimatsu '742 and Krusche teachings, there is simply no suggestion or motivation to modify the Yoshimatsu '742 reference's teachings relating to regulating pilot pressure based on the Krusche reference's teachings concerning regulating the stroke of pumps. Furthermore, the clearly divergent functions indicate that, contrary to the rejection statement's assertion

about “the connection between the pilot relief valve and the tank of Yoshimatsu (5,063,742) and Krusche [being] functionally equivalent,” the rejection statement’s identified teachings of Yoshimatsu '742 and Krusche serve different functions.

There is simply no indication in either the Yoshimatsu '742 reference or the Krusche reference that the prior art recognizes that “the connection between the pilot relief valve and the tank of Yoshimatsu (5,063,742) and Krusche are functionally equivalent,” as asserted in the rejection statement. Since those references themselves do not provide such an indication, the rejection statement must instead be relying on Applicant’s own disclosure for such an indication or on a mere unsupported allegation that the components at issue may possibly be functional or mechanical equivalents. According to the guidance of the M.P.E.P., however, either of those sources are legally improper for providing an equivalence-based rationale for supporting *prima facie* obviousness.

Because there is no suggestion or motivation to make the Office Action’s proposed, hypothetical modification to the Yoshimatsu '742 teachings, and because the rejection statement-identified portions of the Yoshimatsu '742 and Krusche references do not relate to prior art-recognized equivalents, Applicant’s independent claims 1 and 15 are not *prima facie* obvious based on the Office Action’s proposed combination of the Yoshimatsu '742, Krusche, and the Yoshimatsu '266 references. Therefore, those claims are patentably distinguishable from those references, taken either individually or in combination.